Listing of the Claims:

The following is a complete listing of all the claims in the application, with an indication of the status of each:

1 (currently amended). A site specific method for designing, deploying or optimizing a network, comprising the steps of:

generating a computerized model of a space, said space having a plurality of different objects therein each of which may have attributes which impact performance of a communications network;

establishing a desired performance metric for at least one selected location within said space;

modeling performance attributes of a plurality of different components which may be used in said communications network;

specifying components from said plurality of different components to be used in said communications network;

specifying locations within said space for said specified ~~a plurality of different~~ components in said computerized model;

predicting a predicted performance metric for said at least one selected location within said space based on said ~~selected~~ specified components and said specified ~~selected~~ locations; and

comparing said predicted performance metric to said desired performance metric, wherein said steps of specifying components or specifying locations is performed automatically multiple times until a desired comparison result is obtained.

2 canceled

3 (currently amended). The method of claim 1 further comprising the step of specifying a configuration for said ~~selected~~ specified components.

4 (currently amended). The method of claim 3 wherein said step of specifying a

configuration includes the step of defining an orientation of said ~~selected~~ <u>specified</u> component in said space at said ~~selected~~ <u>specified</u> location.

5 Canceled

6 (original). The method of claim 1 wherein at least some of said components specified in said specifying step are wireless communication components.

7 (original). The method of claim 6 wherein at least some of the wireless communication components are antennas.

8 (previously presented). The method of claim 1 wherein said desired performance metric and said predicted performance metric are selected from the group consisting of received signal strength intensity, throughput, bandwidth, quality of service, bit error rate, packet error rate, frame error rate, dropped packet rate, packet latency, round trip time, propagation delay, transmission delay, processing delay, queuing delay, capacity, packet jitter, bandwidth delay product, handoff delay time, signal-to-interference ratio, signal-to-noise ratio, physical equipment price, maintenance requirements, depreciation and installation cost.

9 (original). The method of claim 1 wherein said computerized model of said space is three dimensional.

10 (currently amended). The method of claim 1 wherein said step of ~~selecting~~ <u>specifying</u> locations is performed with a graphical interface.

11 (currently amended). The method of claim 1 wherein said step of specifying locations is performed by specifying a location <u>attributes</u> ~~attribute~~ for said ~~selected~~ <u>specified</u> components.

12-18. Canceled

19 (currently amended). A site specific method for designing, deploying or optimizing a network, comprising the steps of:

generating a computerized model of a space, said space having a plurality of different objects therein each of which may have attributes which impact performance of a network;

establishing a desired performance metric for at least one selected location within said space;

modeling performance attributes of a plurality of different components which may be used in said network;

specifying components from said plurality of different components to be used in said network;

specifying locations within said space for said specified ~~a plurality of different~~ components in said computerized model;

predicting a predicted performance metric for said at least one selected location within said space based on said specified ~~selected~~ components and said specified ~~selected~~ locations; and

comparing said predicted performance metric to said desired performance metric, wherein said steps of specifying components or specifying locations is performed automatically multiple times until a desired comparison result is obtained.

20. Canceled

21 (currently amended). The method of claim 19 further comprising the step of specifying a configuration for said ~~selected~~ specified components.

22 (currently amended). The method of claim 21 wherein said step of specifying a configuration includes the step of defining an orientation of said ~~selected~~ specified component in said space at said specified ~~selected~~ location.

23. Canceled

24 (previously presented). The method of claim 19 wherein at least some of said components specified in said specifying step are wireless communication components.

25 (previously presented). The method of claim 24 wherein at least some of the wireless communication components are from a category including antennas, transmitters, receivers and transceivers.

26 (previously presented). The method of claim 19 wherein said desired performance metric and said predicted performance metric are selected from the group consisting of received signal strength intensity, throughput, bandwidth, quality of service, bit error rate, packet error rate, frame error rate, dropped packet rate, packet latency, round trip time, propagation delay, transmission delay, processing delay, queuing delay, capacity, packet jitter, bandwidth delay product, handoff delay time, signal-to-interference ratio, signal-to-noise ratio, hand off zones, traffic load, position location accuracy, physical equipment price, maintenance requirements, depreciation and installation cost.

27 (previously presented). The method of claim 19 wherein said computerized model of said space is three dimensional.

28 (currently amended). The method of claim 19 wherein said step of ~~selecting~~ specifying locations is performed with a graphical interface.

29 (currently amended). The method of claim 19 wherein said step of specifying locations is performed by specifying ~~a~~ location attributes ~~attribute~~ for said ~~selected~~ specified components.

30 (previously presented). The method of claim 19 wherein said network is a wireless communications network.

31 (currently amended). A site specific apparatus for designing, deploying or optimizing a network, comprising:

a computerized model of a space, said space having a plurality of different objects therein each of which may have attributes which impact performance of a network;

device for establishing a desired performance metric for at least one selected location within said space;

computerized models of performance attributes of a plurality of different components which may be used in said network;

specifier specifying components from said plurality of different components to be used in said network;

specifier specifying locations within said space for said specified ~~a~~ ~~plurality of different~~ components in said computerized model;

predictor predicting a predicted performance metric for said at least one selected location within said space based on said ~~selected~~ specified components and said ~~selected~~ specified locations; ~~and~~

comparator comparing said predicted performance metric to said desired performance metric; and

specifier specifying a configuration for said selected components, and wherein one or more of said specifier specifying components, said specifier specifying locations, and said specifier specifying a configuration are performed automatically multiple times until a desired comparison result is obtained.

32. Canceled

33 (Currently amended). The apparatus of claim 31 ~~32~~ wherein said specifier specifying a configuration defines an orientation of a specified component in said space at a selected location.

34 (previously presented). The apparatus of claim 31 wherein at least some of said components are wireless communication components.

35 (previously presented). The apparatus of claim 34 wherein at least some of the wireless communication components are from a category including antennas, transmitters, receivers and transceivers.

36 (previously presented). The apparatus of claim 31 wherein said desired performance metric and said predicted performance metric are selected from the group consisting of received signal strength intensity, throughput, bandwidth, quality of service, bit error rate, packet error rate, frame error rate, dropped packet rate, packet latency, round trip time, propagation delay, transmission delay, processing delay, queuing delay, capacity, packet jitter, bandwidth delay product, handoff delay time, signal-to-interference ratio, signal-to-noise ratio, hand off zones, traffic load, position location accuracy, physical equipment price, depreciation, maintenance requirements and installation cost.

37 (previously presented). The apparatus of claim 31 wherein said computerized model of said space is three dimensional.

38 (previously presented). The apparatus of claim 31 wherein said network includes wireless communication components.

39. Canceled

40 (currently amended). The apparatus of claim 31 wherein said specifier specifying selector selecting locations is performed with a graphical interface.

41 (currently amended). The apparatus of claim 31 wherein said specifier specifying locations specifies a location attributes attribute for said selected specified components.

42 (currently amended). A site specific system for modeling a communications network, comprising:

a display for displaying a site map of a site in which a communications network is or will be deployed;

a computer representation, rendered on said site map on said display, of a possible configuration of a communications network which includes a plurality of components which are or may be used in the communications network, one or more of said plurality of components having at least one of performance data, cost data, maintenance data, and equipments settings stored in a database;

device for establishing one or more parameters of a desirable configuration of said communications network;

device for changing at least one of

a) one or more components within said configuration of said communications network, and

b) equipment settings of one or more components within said configuration of said communications network;

device for determining predicted or measured parameters for said communications network ~~within~~ for said site computer representation; and

device for determining one or more optimized or preferred configurations of said communications network based on a comparison of predicted or measured parameters generated by said device for determining <u>predicted or measured parameters</u> and said one or more parameters of said desirable configuration established by said device for establishing,

<u>wherein said device for changing automatically changes in an iterative process a type of component or said one or more components.</u>

43 (currently amended). The system of claim 42 wherein said device for determining <u>predicted or measured parameters</u> determines measured parameters for said communications network.

44 (currently amended). The system of claim 42 wherein said device for determining <u>predicted or measured parameters</u> determines predicted parameters for said communications network.

45 (previously presented). The system of claim 42 wherein one or more components of said plurality of components are selected from the group consisting of base stations, base station controllers, amplifiers, attenuators, antennas, coaxial cabling, fiber optic cabling, splitters, repeaters, transducers, converters, couplers, leaky feeder cables, hubs, switches, routers, firewalls, MIMO systems, sensors, power distribution lines, wiring, twisted pair cabling and wireless or other access points.

46 (previously presented). The system of claim 42 wherein said one or more parameters of said desirable configuration are selected from radio signal strength intensity, connectivity, network throughput, bit error rate, frame error rate, signal-to-interference ratio, signal-to-noise ratio, frame resolution per second, traffic, capacity, signal strength, throughput, error rates, packet latency, packet jitter, symbol jitter, quality of service, security, coverage area, bandwidth, server identification parameters, transmitter identification parameters, best server locations, transmitter location parameters, billing information, network performance parameters, C/I, C/N, body loss, height above floor, height above ground, noise figure, secure coverage locations, propagation loss factors, angle of arrival, multipath components, multipath parameters, antenna gains, noise level reflectivity, surface roughness, path loss models, attenuation factors, throughput performance metrics, packet error rate, round trip time, dropped packet rate, queuing delay, signal level, interference level, quality of service, bandwidth delay product, handoff delay time, signal loss, data loss, number of users serviced, user density, locations of adequate coverage, handoff locations, locations of adequate throughput, E_c/I_o, system performance parameters, equipment price, maintenance and cost information, user class or subclass, user type, position location, all in either absolute or relative terms.

47-48. Canceled

49 (currently amended). A site specific system for modeling a communications

network, comprising:

a display for displaying a site map of a site in which a communications network is or will be deployed;

a computer representation, rendered on said site map on said display, of a possible configuration of a communications network which includes a plurality of components which are or may be used in the communications network, one or more of said plurality of components having at least one of performance data, cost data, maintenance data, and equipment settings stored in a database;

device for establishing one or more parameters of a desirable configuration of said communications network;

device for changing at least one of

a) one or more components within said configuration of said communications network, and

b) equipment settings of one or more components within said configuration of said communications network;

device for determining predicted or measured parameters for said communications network for said site computer representation; and

device for determining one or more optimized or preferred configurations of said communications network based on a comparison of predicted or measured parameters generated by said device for determining predicted or measured parameters and said one or more parameters of said desirable configuration established by said device for establishing, The system of claim 42 wherein said device for changing automatically changes in an iterative process a manufacturer of said one or more components.

50. canceled

51 (currently amended). A site specific system for modeling a communications network, comprising:

a display for displaying a site map of a site in which a communications network is or will be deployed;

a computer representation, rendered on said site map on said display, of a possible configuration of a communications network which includes a plurality of components which are or may be used in the communications network, one or more of said plurality of components having at least one of performance data, cost data, maintenance data, and equipment settings stored in a database;

device for establishing one or more parameters of a desirable configuration of said communications network;

device for changing at least one of

a) one or more components within said configuration of said communications network, and

b) equipment settings of one or more components within said configuration of said communications network;

device for determining predicted or measured parameters for said communications network for said site computer representation; and

device for determining one or more optimized or preferred configurations of said communications network based on a comparison of predicted or measured parameters generated by said device for determining predicted or measured parameters and said one or more parameters of said desirable configuration established by said device for establishing, ~~The system of claim 42~~ wherein said device for changing automatically changes in an iterative process a location of a component of said one or more components.

52. Canceled

53 (currently amended). A site specific system for modeling a communications network, comprising:

a display for displaying a site map of a site in which a communications network is or will be deployed;

a computer representation, rendered on said site map on said display, of a possible configuration of a communications network which includes a plurality of components which are or may be used in the communications network, one or

more of said plurality of components having at least one of performance data, cost data, maintenance data, and equipment settings stored in a database;

device for establishing one or more parameters of a desirable configuration of said communications network;

device for changing at least one of

a) one or more components within said configuration of said communications network, and

b) equipment settings of one or more components within said configuration of said communications network;

device for determining predicted or measured parameters for said communications network for said site computer representation; and

device for determining one or more optimized or preferred configurations of said communications network based on a comparison of predicted or measured parameters generated by said device for determining predicted or measured parameters and said one or more parameters of said desirable configuration established by said device for establishing, The system of claim 42 wherein said device for changing automatically changes in an iterative process one or more of transmit power, channel or frequency, bandwidth, data rate, antenna type, antenna configurations or positions, modulation or coding type, protocol, data rate, switching in a spare component, resetting, or changing settings of a component of said one or more components.

54. Canceled

Claim 55 (currently amended). A site specific method for modeling a communications network, comprising:

displaying a site map of a site in which a communications network is or will be deployed;

configuring a computer representation on said site map on said display a possible configuration of a communications network which includes a plurality of components which are or may be used in the communications network, one or

more of said plurality of components having at least one of performance data, cost data, maintenance data, and equipment settings stored in a database;

establishing one or more parameters of a desirable configuration of said communications network;

changing at least one of

a) one or more components within said configuration of said communications network, and

b) equipment settings of one or more components within said configuration of said communications network;

determining predicted or measured parameters for said communications network within said site generated by said configuring step and said changing step; and

determining one or more optimized or preferred configurations of said communications network based on a comparison of predicted or measured parameters generated by said determining <u>predicted or measured parameters</u> step and said one or more parameters of said desirable configuration established by said establishing step,

<u>wherein said changing step automatically changes in an iterative process a type of component or said one or more components.</u>

56 (currently amended). The method of claim 55 wherein said determining <u>predicted or measured parameters</u> step determines measured parameters for said communications network.

57 (currently amended). The method of claim 55 wherein said determining <u>predicted or measured parameters</u> step determines predicted parameters for said communications network.

58 (previously presented). The method of claim 55 wherein one or more components of said plurality of components are selected from the group consisting of base stations, base station controllers, amplifiers, attenuators, antennas, coaxial

cabling, fiber optic cabling, splitters, repeaters, transducers, converters, couplers, leaky feeder cables, hubs, switches, routers, firewalls, MIMO systems, sensors, power distribution lines, wiring, twisted pair cabling and wireless or other access points.

59 (previously presented). The method of claim 55 wherein said one or more parameters of said desirable configuration are selected from radio signal strength intensity, connectivity, network throughput, bit error rate, frame error rate, signal-to-interference ratio, signal-to-noise ratio, frame resolution per second, traffic, capacity, signal strength, throughput, error rates, packet latency, packet jitter, symbol jitter, quality of service, security, coverage area, bandwidth, server identification parameters, transmitter identification parameters, best server locations, transmitter location parameters, billing information, network performance parameters, C/I, C/N, body loss, height above floor, height above ground, noise figure, secure coverage locations, propagation loss factors, angle of arrival, multipath components, multipath parameters, antenna gains, noise level reflectivity, surface roughness, path loss models, attenuation factors, throughput performance metrics, packet error rate, round trip time, dropped packet rate, queuing delay, signal level, interference level, quality of service, bandwidth delay product, handoff delay time, signal loss, data loss, number of users serviced, user density, locations of adequate coverage, handoff locations, locations of adequate throughput, E_c/I_o, system performance parameters, equipment price, maintenance and cost information, user class or subclass, user type, position location, all in either absolute or relative terms.

60-61. Canceled

62 (currently amended). <u>A site specific method for modeling a communications network, comprising:</u>

<u>displaying a site map of a site in which a communications network is or will be deployed;</u>

configuring a computer representation on said site map on said display a possible configuration of a communications network which includes a plurality of components which are or may be used in the communications network, one or more of said plurality of components having at least one of performance data, cost data, maintenance data, and equipment settings stored in a database;

establishing one or more parameters of a desirable configuration of said communications network;

changing at least one of

a) one or more components within said configuration of said communications network, and

b) equipment settings of one or more components within said configuration of said communications network;

determining predicted or measured parameters for said communications network for said site generated by said configuring step and said changing step; and

determining one or more optimized or preferred configurations of said communications network based on a comparison of predicted or measured parameters generated by said determining predicted or measured parameters step and said one or more parameters of said desirable configuration established by said establishing step,

The method of claim 55 wherein said changing step automatically changes in an iterative process a manufacturer of said one or more components.

63. Canceled

64 (currently amended). A site specific method for modeling a communications network, comprising:

displaying a site map of a site in which a communications network is or will be deployed;

configuring a computer representation on said site map on said display a possible configuration of a communications network which includes a plurality of

components which are or may be used in the communications network, one or more of said plurality of components having at least one of performance data, cost data, maintenance data, and equipment settings stored in a database;

establishing one or more parameters of a desirable configuration of said communications network;

changing at least one of

a) one or more components within said configuration of said communications network, and

b) equipment settings of one or more components within said configuration of said communications network;

determining predicted or measured parameters for said communications network for said site generated by said configuring step and said changing step; and

determining one or more optimized or preferred configurations of said communications network based on a comparison of predicted or measured parameters generated by said determining predicted or measured parameters step and said one or more parameters of said desirable configuration established by said establishing step,

~~The method of claim 55~~ wherein said changing step automatically changes in an iterative process a location of a component of said one or more components.

65. Canceled.

66 (currently amended). A site specific method for modeling a communications network, comprising:

displaying a site map of a site in which a communications network is or will be deployed;

configuring a computer representation on said site map on said display a possible configuration of a communications network which includes a plurality of components which are or may be used in the communications network, one or more of said plurality of components having at least one of performance data, cost

data, maintenance data, and equipment settings stored in a database;

establishing one or more parameters of a desirable configuration of said communications network;

changing at least one of

a) one or more components within said configuration of said communications network, and

b) equipment settings of one or more components within said configuration of said communications network;

determining predicted or measured parameters for said communications network for said site generated by said configuring step and said changing step; and

determining one or more optimized or preferred configurations of said communications network based on a comparison of predicted or measured parameters generated by said determining predicted or measured parameters step and said one or more parameters of said desirable configuration established by said establishing step,

~~The method of claim 55~~ wherein said changing step automatically changes in an iterative process one or more of transmit power, channel or frequency, bandwidth, data rate, antenna type, antenna configurations or positions, modulation or coding type, protocol, data rate, switching in a spare component, resetting, or changing settings of a component of said one or more components.

67-69 Canceled